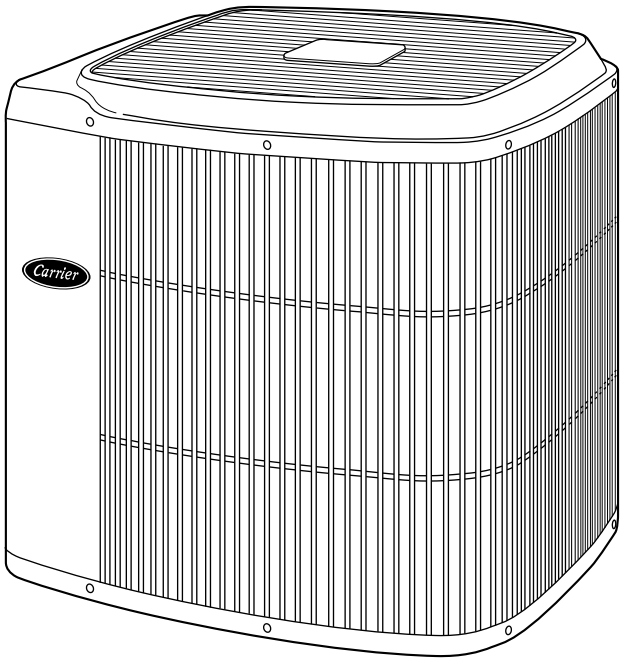
Carrier®
HEATING & COOLING

Product Data

38YSA (60 Hz) Heat Pump

Sizes 024 thru 048



The 38YSA Outdoor Sections of high efficiency Split-System Heat Pumps are designed for quiet, reliable heating during the winter and cooling during the summer. These heat pump systems provide economy of operation through energy conservation. They recover heat for indoor comfort from outdoor air during the heating season and, by automatically reversing the refrigerant system, remove indoor heat and excess humidity during the cooling season. All models are 208/230v, single phase, 60 hertz, and are listed with ARI, UL, c-UL, and CSA-EEV. The 38YSA meets the Energy Star℠ guidelines for energy efficiency.

CARRIER'S TECH2000 SILENCER SYSTEM

The Silencer System features the InViroFlow design, energy-efficient fan and motor, sound hood, and discharge muffler.

InViroFlow Design — improves airflow pattern and requires less energy.

Energy-Efficient Fan and Fan Motor — adds to quiet operation while moving air more efficiently.

Sound Hood — muffles noise from operation.

Discharge Muffler — minimizes low frequency sound and pressure pulsation generated by compressor discharge gas.

FEATURES/BENEFITS

Compressor — This unit features a

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scroll compressor which is significantly more efficient than conventional compressors, especially in the heating mode at low-ambient temperatures. Its simple design offers improved reliability. Each compressor is mounted on rubber isolators for additional sound reduction. The scroll compressor will start under most system loads, thus eliminating the need for start assistance components. For improved serviceability, all models are equipped with a compressor terminal plug. Continuous operation is approved down to –30°F (–34.4°C) in the heating mode and down to 55°F (12.8°C) in the cooling mode. (See heating and cooling performance tables.) The scroll compressor is covered with a standard 10-year limited warranty.

Built-In-Reliable Components — Include a suction accumulator that keeps liquid refrigerant from reaching the compressor; a discharge thermostat to protect the scroll compressor from excessive internal discharge temperatures under extreme operating conditions, such as loss of charge or failure of evaporator fan; high-pressure switch for high-pressure protection; low-pressure switch for loss of charge protection; TXV for heating operation; and a compressor sound hood.

Defrost Control Board — Incorporates a defrost relay, defrost timer, and low-voltage terminal board. The defrost control is a time/temperature initiation/termination control which includes 3 field-selectable time periods of 30, 50, and 90 minutes; and compressor short-cycle protection.

Thermostatic Expansion Valve (TXV) — In addition to the TXV on the outdoor section, this unit must be installed with a TXV on the indoor coil. The FC4 and FK4 indoor fan coils come factory equipped with a bi-flow TXV. When installed in this application, no further change is required. If any other indoor fan coil or furnace coil is used, an accessory bi-flow TXV must be installed. See accessory list in this publication for correct part number. **Use only approved coil combinations listed in this publication.**

Weather-Protective Cabinet — Steel is protected with a galvanized coating, then treated with a layer of zinc phosphate to which a coat of modified polyester powder coating is applied and baked on. This provides each unit with a hard, smooth finish that will last for many years.

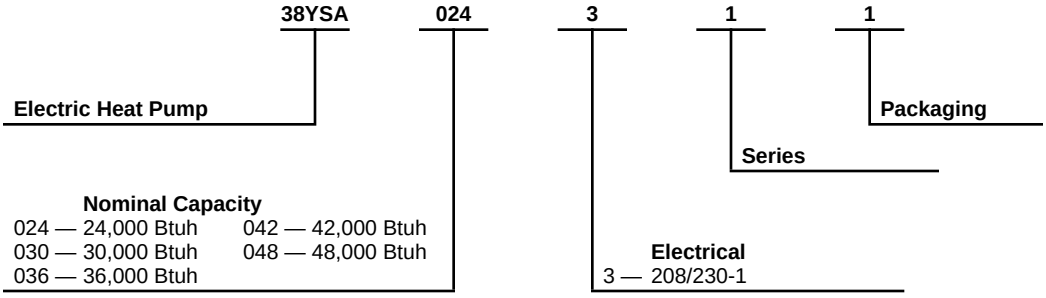
All screws on cabinet exterior are coated for a long-lasting, rust-resistant, quality appearance.

Unit Design — All units are equipped with totally enclosed fan motors for greater reliability under adverse weather conditions. The large, wraparound coil uses copper tube and enhanced sine wave aluminum fin and is designed for optimum heat transfer during heating and cooling. The vertical air discharge carries sound and air up and away from adjacent patio areas and foliage. Rows of composite coils can be cleaned with a common garden hose.

External Service Valves — Both service valves are brass, back seating type with sweat connections. Each valve has a service port for ease of checking operating refrigerant pressures. The suction service port provides for ease of checking operating pressure in the heating mode.

Limited Warranty — Standard 1-year warranty on all parts, with an additional 9-year warranty on the compressor.

Model number nomenclature



CERTIFICATION APPLIES ONLY WHEN THE COMPLETE SYSTEM IS LISTED WITH ARI.

CERTIFICATE NO. FM 28768

APPROVALS
ISO 9001
EN 29001
BS 5750 PART 1
ANSI/ASQC Q91

CERTIFICATION OF MANUFACTURING SITE

As an ENERGY STAR℠ Partner, Carrier Corporation has determined that this product meets the ENERGY STAR guidelines for energy efficiency.

Physical data

MODEL 38YSA	024-31	030-31	036-31	042-31	048-31
OPERATING WT (Lb)	205	233	223	243	343
COMPRESSOR					
Manufacturer			Copeland		
Type			Scroll		
REFRIGERANT			R-22		
Control			TXV (Cooling & Heating)		
Charge (Lb)	7.38	9.13	10.88	10.88	12.38
COND FAN			Propeller Type, Direct Drive		
Air Discharge			Vertical		
Air Qty (CFM)	2400	2400	2400	2400	3400
Motor HP	1/5	1/5	1/5	1/5	1/5
Motor RPM (60 hz)	825	825	825	825	820
COND COIL					
Face Area (Sq Ft)	15.15	18.18	18.18	18.18	20.74
Fins per In.	20	20	20	20	20
Rows	2	2	2	2	2
Circuits	3	5	5	5	6
CONNECT (In. ID)			Sweat		
Vapor	5/8	3/4	3/4	7/8	7/8
Liquid			3/8		
REFRIG TUBES* (In. OD)					
Vapor (0–50 Ft Tube Length)	5/8	3/4	3/4	7/8	7/8
Vapor (Max Diameter for Long-Line Applications)	3/4	7/8	7/8	1-1/8	1-1/8
Liquid (0–50 Ft Tube Length)			3/8		
Liquid (For Long-Line Applications)			3/8		

* Tube sizes are for runs up to 50 ft. For tube set over 50 ft, consult Residential Split System Long-Line Application Guideline.
NOTE: See unit Installation Instructions for proper installation.

METERING DEVICE

UNIT SIZE	SERIES	OUTDOOR TXV	INDOOR TXV*
024	31	Standard	KHATX1001HSO
030	31	Standard	KHATX1101HSO
036	31	Standard	KHATX1201HSO
042	31	Standard	KHATX1201HSO
048	31	Standard	KHATX1301HSO

* TXV must be ordered separately when indoor coil is not equipped with a TXV. TXV listed is for any approved coil combination. All TXVs are bi-flow, hard shutoff.

Accessories

ORDERING NUMBER	DESCRIPTION
P251-0083 (RCD)*	Low-Ambient Controller — All Sizes
32LT660004 (RCD)†	MotorMaster® Control — All Sizes
HC38GE230 (RCD)	Ball Bearing Fan Motor — All Sizes
KAAFT0101AAA‡	Evaporator Freeze Thermostat — All Sizes
KHAIR0101AAA‡	Isolation Relay — All Sizes
KSAHS1501AAA	Start Assist — Capacitor and Relay — Sizes 024–042
KSAHS1601AAA	Start Assist — Capacitor and Relay — Size 048
KAACH1201AAA	Crankcase Heater — All Sizes
KHAOT0301FST	Outdoor Thermostat — All Sizes
KHAOT0201SEC	Secondary Outdoor Thermostat — All Sizes
KFAEH2201H10	Smart Heat Electric Heater
KFAEH2301H15	Smart Heat Electric Heater
KFAEH2401H20	Smart Heat Electric Heater
KHASA0101AAA**	Service Alarm — All Sizes
KHAIC0101AAA	Interface Control (Optimizer II) — All Sizes
KHATX1001HSO††	Bi-Flow TXV (Hard Shutoff) — Size 024
KHATX1101HSO††	Bi-Flow TXV (Hard Shutoff) — Size 030
KHATX1201HSO††	Bi-Flow TXV (Hard Shutoff) — Sizes 036, 042
KHATX1301HSO††	Bi-Flow TXV (Hard Shutoff) — Size 048
P504-8083S (RCD)	Filter-Drier — Bi-Flow — All Sizes
KHALS0101LLS	Liquid-Line Solenoid Valve — All Sizes
KSASF0101AAA	Support Feet — 4 in. — All Sizes
KHASS0206MPK	Snow Stand — Sizes 024–042
KHASS0306MPK	Snow Stand — Size 048

* Isolation relay required.
† Fan motor with ball bearings required.
‡ Consult low-ambient Installation Instructions for application.
** For indicator light function, thermostat specified must be used and wired according to service alarm Installation Instructions.
†† Must be applied on coils not equipped with TXV.

THERMOSTAT PKG	DESCRIPTION
TSTATCCNHP01-A	Thermostat, Auto Changeover, Non-Programmable, °F/°C, 2-Stage Heat, 1-Stage Cool
TSTATCCPHP01-A	Thermostat, Auto Changeover, 7-Day Programmable, °F/°C, 2-Stage Heat, 1-Stage Cool
TSTATCCPDF01-A	Thermostat, Auto Changeover, 7-Day Programmable, °F/°C, Dual Fuel Thermostat, Must be used with Outdoor Sensor (TSTATCCSEN01)
TSTATCCP2S01-A	Thermostat, Auto Changeover, 7-Day Programmable, °F/°C, 2-Stage Heat/2-Stage Cool in AC Mode, 3-Stage Heat/2-Stage Cool in HP Mode (For Use with the FK Smart Heat Option)
--HH--07AT-215	Thermostat, Manual Changeover, Non-Programmable, °F, 2-Stage Heat, 1-Stage Cool
TSTATCCSEN01	Outdoor Air Temperature Sensor
TSTATXXNBP01	Backplate for Non-Programmable Thermostat
TSTATXXPBP01	Backplate for Programmable Thermostat
TSTATXXCNV10	Thermostat Conversion Kit (4 to 5 wire) — 10 Pack

Accessory description and usage (Listed alphabetically)

1. **Ball Bearing Fan Motor**
   A fan motor with ball bearings which permits speed reduction while maintaining bearing lubrication.
   SUGGESTED USE: Required on all units where Low-Ambient Controller (full modulation feature) or MotorMaster® Control has been added.

2. **Compressor Start Assist — Capacitor and Relay**
   Start capacitor and start relay gives "hard" boost to compressor motor at each start-up.
   SUGGESTED USE: Installations where interconnecting tube length exceeds 50 ft.
   Installations where outdoor design temperature exceeds 105°F (40.6°C).
   Replacement installations with hard shutoff expansion valve on indoor coil.
   Installations where Liquid-Line Solenoid Valve has been added.

3. **Crankcase Heater**
   An electric resistance heater which mounts to the base of the compressor to keep the lubricant warm during off cycles. Improves compressor lubrication on restart and minimizes chance of refrigerant slugging. May or may not include a thermostat control.
   SUGGESTED USE: When interconnecting tube length exceeds 50 ft.
   When unit will be operated below 55°F (12.8°C) outdoor air temperature. (Use with Low-Ambient Controller.)
   All commercial installations.

4. **Evaporator Freeze Thermostat**
   An SPST temperature actuated switch which stops unit operation when evaporator reaches freeze-up conditions.
   SUGGESTED USE: All units where Low-Ambient Controller has been added.

5. **Filter Drier — Bi-Flow**
   A device for removing contaminants from refrigerant circulating in a heat pump system: 2-direction flow.
   SUGGESTED USE: All split-system heat pumps.

6. **Interface Control**
   An electric control for controlling a heat pump and gas or oil furnace system for maximum energy savings. It allows heat pump to operate down to a predetermined economic balance point temperature, then switches to allow furnace operation only below that temperature. KHAIC0101AAA requires outdoor thermostat to be adjusted for economic balance point temperature.
   SUGGESTED USE: Required for all heat pump and gas- or oil-fired furnace combination systems, unless Dual Fuel Thermostat is used.

7. **Isolation Relay**
   An SPDT relay which switches the low-ambient controller out of the outdoor fan motor circuit when the heat pump switches to heating mode.
   SUGGESTED USE: All heat pumps where Low-Ambient Controller has been added.

8. **Liquid-Line Solenoid Valve (LSV)**
   An electrically operated shutoff valve to be installed at the outdoor or indoor unit (depending on tubing configuration) which stops and starts refrigerant liquid flow in response to compressor operation. Maintains a column of refrigerant liquid ready for action at next compressor operation cycle.
   NOTE: Compressor Start-Assist — Capacitor and Relay must also be used.
   SUGGESTED USE: In certain long-line applications (refer to Residential Split System Long-Line Application Guideline).

9. **Low-Ambient Controller**
   Head pressure controller is a fan control device activated by a temperature sensor mounted on a header tube of the outdoor coil. It is designed to cycle the outdoor fan motor in order to maintain condensing temperature within normal operating limits (approximately 100°F high and 60°F low). The control will maintain working head pressure at low-ambient temperatures down to 0°F when properly installed.
   SUGGESTED USE: Cooling operation at outdoor temperatures below 55°F (12.8°C).
   All commercial installations.

10. **MotorMaster® Control**
    A fan speed control device activated by a temperature sensor. Designed to control condenser fan motor speed in response to the saturated, condensing temperature during operation in cooling mode only. For outdoor temperatures down to –20°F, it maintains condensing temperature at 100°F ± 10°F.
    SUGGESTED USE: Cooling operation at outdoor temperatures below 55°F.
    All commercial installations.

11. **Outdoor Air Temperature Sensor**
    A device that allows the temperature at a remote location (outdoors) to be displayed on the thermostat.
    SUGGESTED USE: All corporate programmable thermostats.

12. **Outdoor Thermostat**
    An SPDT temperature actuated switch which turns on supplemental electric heaters when outdoor air temperature drops below set point.
    SUGGESTED USE: Heat pump installations with multiple-stage supplemental heaters.

13. **Secondary Outdoor Thermostat**
    An SPDT temperature actuated switch which turns on third stage of supplemental electric heaters when outdoor air temperature drops below the second-stage set point.
    SUGGESTED USE: Heat pump installations where 3-stage operation of supplemental heaters is desired.

14. **Service Alarm**
    A current-sensing lockout relay which provides immediate notification that compressor is not operating during a call for heating or cooling. Used with proper room thermostat, the thermostat light is turned on signifying service is required. This can minimize electrical cost increase due to operation of supplemental heaters only.
    SUGGESTED USE: As a feature to notify owner immediately when the system is not operating most efficiently.

15. **Snow Stand**
    Coated wire rack which supports unit 18 in. above mounting pad to allow for drainage from unit base.
    SUGGESTED USE: Heat pump installations in heavy snowfall areas.
    Heat pump installations in snowdrift locations.
    Heat pump installations in areas of prolonged subfreezing temperatures.
    All commercial installations.

16. **Support Feet**
    Four stick-on plastic feet which raise the unit 4 in. above the mounting pad. This allows sand, dirt, and other debris to be flushed from the unit base, minimizing corrosion.
    SUGGESTED USE: Coastal installations.
    Windy areas or where debris is normally circulating.
    Rooftop installations.

17. **Thermostatic Expansion Valve (TXV) — Bi-Flow**
    A modulating flow-control valve which meters refrigerant liquid flow rate into the evaporator in response to the superheat of the refrigerant gas leaving the evaporator. Kit includes valve, adapter tubes, external equalizer tube.
    SUGGESTED USE: Required for proper system performance. Refer to ARI Unitary Directory.
    Required for use on all zoning systems.

Electrical data

UNIT SIZE-SERIES	V/PH	OPER VOLTS*		COMPR		FAN FLA	MCA	60°C MIN WIRE SIZE†	75°C MIN WIRE SIZE†	60°C MAX LENGTH (Ft)‡	75°C MAX LENGTH (Ft)‡	MAX FUSE** OR HACR TYPE CKT BKR AMPS
		Max	Min	LRA	RLA							
024-31	208/230-1	253	187	56.0	10.9	1.1	14.7	14	14	53	50	20
030-31				72.5	13.5	1.1	18.0	14	14	44	42	25
036-31				88.0	19.5	1.1	25.5	10	10	77	73	40
042-31				104.0	17.9	1.1	23.5	12	12	52	50	35
048-31				129.0	23.9	1.4	31.3	8	10	97	59	45

* Permissible limits of the voltage range at which unit will operate satisfactorily. Operation outside these limits may result in unit failure.

† If wire is applied at ambient greater than 30°C (86°F), consult Table 310-16 of the NEC (ANSI/NFPA 70).
The ampacity of nonmetallic-sheathed cable (NM), trade name ROMEX, shall be that of 60°C (140°F) conductors, per the NEC (ANSI/NFPA 70) Article 336-30.

‡ Length shown is as measured 1 way along the wire path between the unit and the service panel for maximum 2% voltage drop. If other than uncoated (non-plated), 60° or 75°C (140° or 167°F) insulation, copper wire (solid wire for 10 AWG and smaller, stranded wire for larger than 10 AWG) is used, consult applicable tables of the NEC (ANSI/NFPA 70).

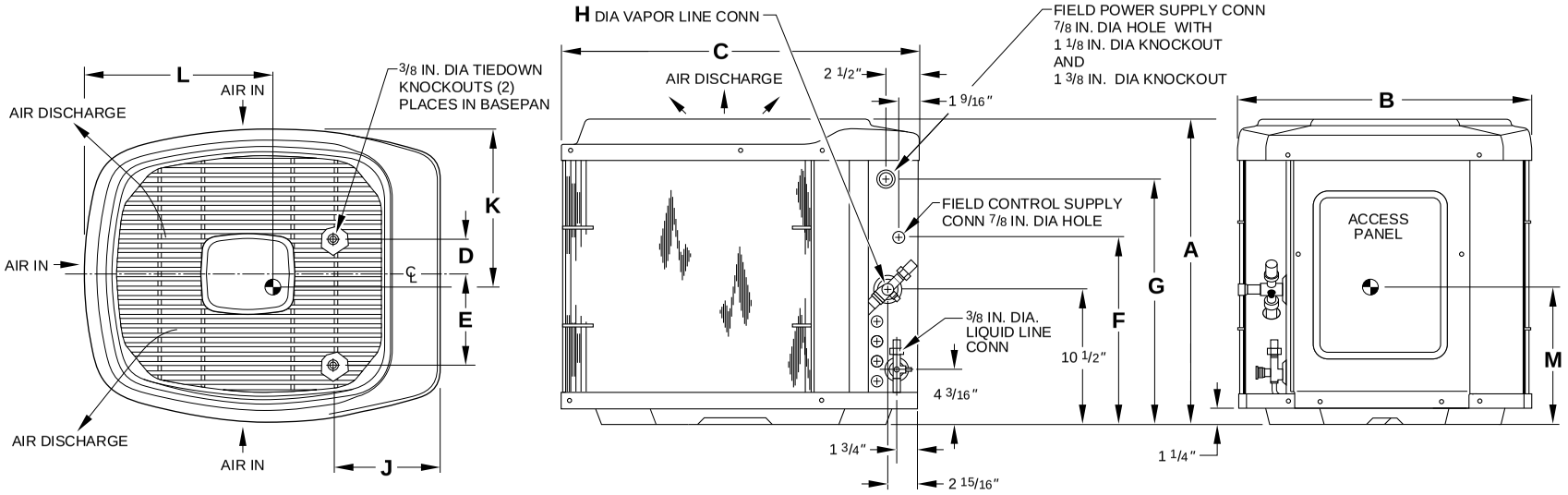
** Time-delay fuse.

FLA — Full Load Amps
HACR — Heating, Air Conditioning, Refrigeration
LRA — Locked Rotor Amps
MCA — Minimum Circuit Amps
RLA — Rated Load Amps

NOTES:
1. Control circuit is 24v on all units and requires external power source.
2. Copper wire must be used from service disconnect to unit.
3. All motors/compressors contain internal overload protection.

NOTES:

1. Allow 30 in. clearance to service side of unit, 48 in. above unit, 6 in. on one side, 12 in. on remaining side, and 24 in. between units for proper airflow.
2. Minimum outdoor operating ambient in cooling mode is 55°F (unless low ambient control is used) max 125°F.
3. Maximum outdoor operating ambient in heating mode is 66°F.
4. Series designation is the 13th position of the unit model number.
5. Center of gravity ◔.



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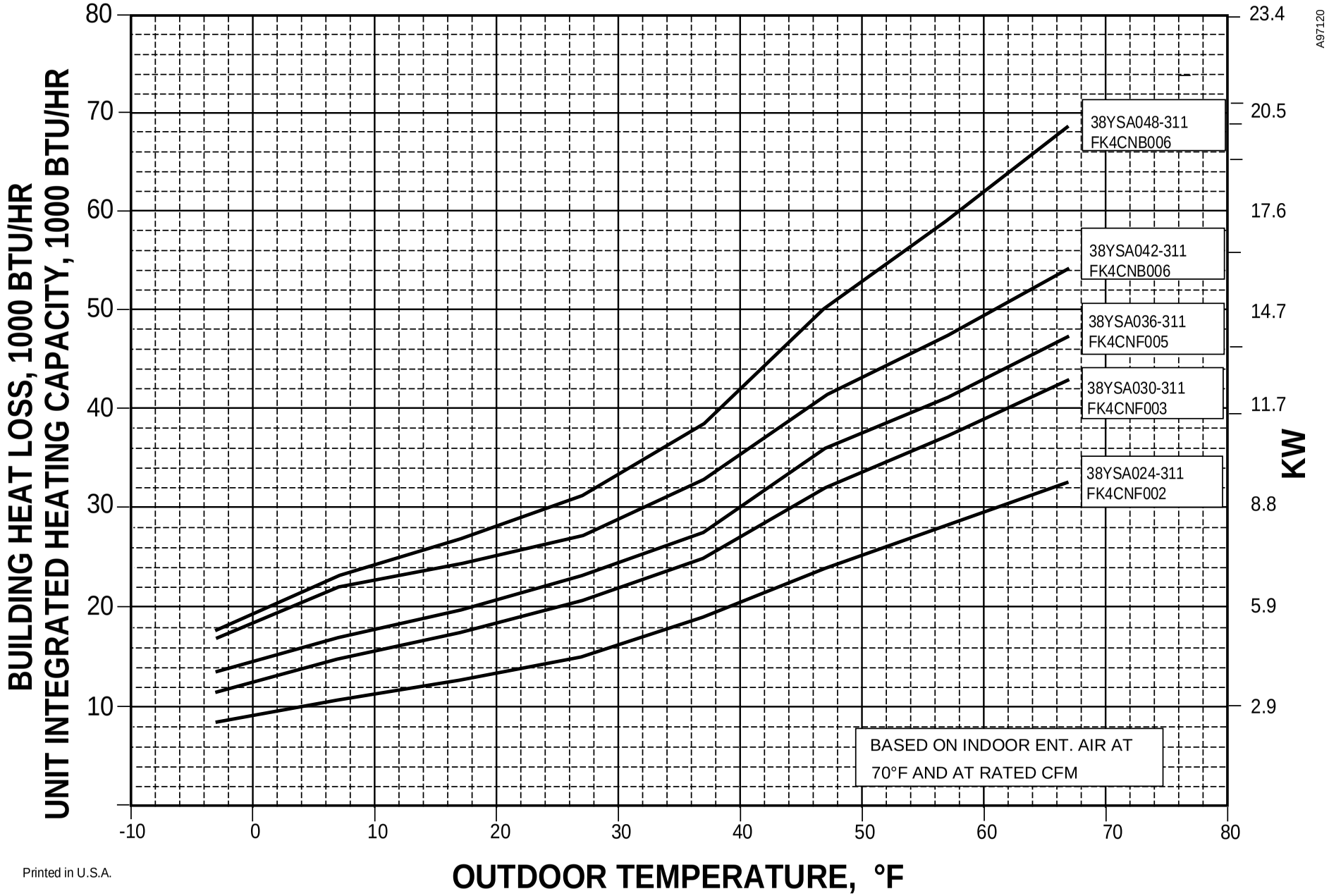
DIMENSIONS (IN.)

UNIT SIZE	SERIES	UNIT DIMENSIONS												MINIMUM MOUNTING PAD DIMENSIONS	
		A	B	C	D	E	F	G	H	J	K	L	M	Support Feet	Snow Stand
024	1	33-13/16	30	34-15/16	4	9-3/4	21-1/2	27-7/8	5/8	8-3/16	16-13/16	20-1/2	14	26 x 32	31 x 35
030	1	39-13/16	30	34-15/16	4	9-3/4	27-1/2	33-7/8	3/4	8-3/16	16-1/2	20-3/8	15	26 x 32	31 x 35
036	1	39-13/16	30	34-15/16	4	9-3/4	27-1/2	33-7/8	3/4	8-3/16	16-1/2	20-3/8	16	26 x 32	31 x 35
042	1	39-13/16	30	34-15/16	4	9-3/4	27-1/2	33-7/8	7/8	8-3/16	16-1/2	20-3/8	15	26 x 32	31 x 35
048	1	33-13/16	38-5/8	45	5-5/16	11-13/16	21-1/2	27-7/8	7/8	8-9/16	19-1/2	25-1/2	16	32 x 42	36 x 46

38YSA BALANCE POINT WORKSHEET



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Combination ratings

UNIT SIZE-SERIES	INDOOR UNIT	ARI STANDARD RATINGS†										Seasonal Efficiency HSPF	Sound Rating (dBA)
		Cooling						Heating					
			SEER					High-Temp		Low-Temp			
		TC	Factory-Supplied Enhance-ment	Standard Rating	Carrier Gas Furnace or Accessory TDR‡	Accessory TXV**	EER	TC	COP	TC	COP		
024-31	FK4CNF002*	23,600	TDR & TXV	14.50	—	—	12.50	24,000	3.56	13,900	2.30	8.60	72
	FK4CNF001	23,400	TDR & TXV	14.20	—	—	12.35	24,000	3.52	13,900	2.30	8.60	72
	FK4CNF003	23,800	TDR & TXV	14.70	—	—	12.80	24,000	3.58	13,800	2.32	8.60	72
030-31	FK4CNF003*	29,400	TDR & TXV	15.00	—	—	12.50	32,000	3.44	19,200	2.36	8.40	72
	FK4CNF002	29,000	TDR & TXV	14.20	—	—	12.00	32,000	3.42	19,400	2.36	8.30	72
	FK4CNF005	30,000	TDR & TXV	15.50	—	—	12.85	32,000	3.66	19,300	2.48	9.00	72
036-31	FK4CNF005*	35,400	TDR & TXV	14.50	—	—	12.20	36,000	3.72	21,800	2.52	9.00	73
	FK4CNB006	35,400	TDR & TXV	14.70	—	—	12.40	35,400	3.92	21,600	2.66	9.40	73
042-31	FK4CNB006*	41,000	TDR & TXV	14.20	—	—	12.05	41,500	3.80	25,000	2.60	8.80	73
	FK4CNF005	41,000	TDR & TXV	13.70	—	—	11.80	42,000	3.56	25,400	2.42	8.20	73
	FC4BNB054	40,000	TDR & TXV	13.00	—	—	11.05	42,000	3.60	25,600	2.46	8.20	73
048-31	FK4CNB006*	47,500	TDR & TXV	14.00	—	—	12.00	50,000	3.70	29,400	2.54	9.00	74
	FK4CNF005	47,500	TDR & TXV	13.50	—	—	11.65	50,000	3.26	30,200	2.08	7.50	74
	FC4BNB054	47,000	TDR & TXV	13.00	—	—	11.20	50,000	3.56	30,000	2.44	8.50	74

* Outdoor section/indoor section combination tested in accordance with DOE test procedures for heat pumps. Ratings for other combinations are determined under DOE computer simulation procedures.

† Ratings are net values reflecting the effects of circulating fan heat. Supplemental electric heat is not included. Ratings are based on:
Cooling Standard: 80°F (27°C) db 67°F (19°C) wb indoor entering air temperature and 95°F (35°C) db air entering outdoor unit.
High-Temp Heating Standard: 70°F (21°C) db indoor entering air temperature and 47°F (8°C) db 43°F (6°C) wb air entering outdoor unit.
Low-Temp Heating Standard: 70°F (21°C) db indoor entering air temperature and 17°F (–9°C) db 15°F (–10°C) wb air entering outdoor unit.

‡ In most cases, only 1 method should be used to achieve TDR function. Using more than 1 method in a system may cause degradation in performance. Use either the accessory Time-Delay Relay KAATD0101TDR or a furnace equipped with TDR. All Carrier furnaces are equipped with TDR except for the 58GFA.

** Requires hard shutoff TXV; based on computer simulation.

SEER — Seasonal Energy Efficiency Ratio
COP — Coefficient of Performance
HSPF — Heating Seasonal Performance Factor
TC — Total Capacity (Btuh)
TXV — Thermostatic Expansion Valve
TDR — Time-Delay Relay

Detailed cooling capacities*

EVAP AIR		CONDENSER ENTERING AIR TEMPERATURES °F																	
		75			85			95			105			115			125		
		Capacity MBtuh†		Total Sys	Capacity MBtuh†		Total Sys	Capacity MBtuh†		Total Sys	Capacity MBtuh†		Total Sys	Capacity MBtuh†		Total Sys	Capacity MBtuh†		Total Sys
CFM	EWB	Total	Sens‡	Kw**	Total	Sens‡	Kw**	Total	Sens‡	Kw**	Total	Sens‡	Kw**	Total	Sens‡	Kw**	Total	Sens‡	Kw**
38YSA024-31 Outdoor Section With FK4CNF002 Indoor Section																			
630	72	27.1	13.5	1.48	26.2	13.2	1.67	25.3	12.9	1.87	24.2	12.5	2.09	23.1	12.1	2.33	21.6	11.5	2.59
	67	25.0	17.0	1.50	24.2	16.6	1.68	23.2	16.3	1.88	22.2	15.9	2.09	21.0	15.3	2.33	19.6	14.8	2.58
	63††	23.3	16.6	1.50	22.5	16.2	1.68	21.6	15.8	1.88	20.6	15.4	2.09	19.6	14.9	2.32	18.3	14.4	2.57
	62	22.9	20.3	1.50	22.1	19.9	1.68	21.2	19.5	1.88	20.2	19.0	2.09	19.2	18.6	2.32	18.2	18.0	2.57
	57	22.0	22.0	1.51	21.3	21.3	1.69	20.6	20.6	1.88	19.8	19.8	2.09	19.0	19.0	2.32	18.0	18.0	2.57
700	72	27.5	14.1	1.49	26.7	13.7	1.68	25.7	13.4	1.88	24.6	13.0	2.10	23.4	12.6	2.34	21.9	12.1	2.60
	67	25.4	17.9	1.51	24.6	17.5	1.69	23.6	17.1	1.89	22.6	16.7	2.11	21.3	16.2	2.34	19.9	15.7	2.59
	63††	23.7	17.4	1.51	22.9	17.0	1.69	22.0	16.6	1.89	20.9	16.2	2.10	19.9	15.7	2.33	18.6	15.2	2.58
	62	23.3	21.5	1.51	22.5	21.1	1.69	21.6	20.7	1.89	20.6	20.2	2.10	19.7	19.6	2.33	18.7	18.7	2.59
	57	22.7	22.7	1.52	22.1	22.1	1.69	21.3	21.3	1.89	20.5	20.5	2.10	19.7	19.7	2.33	18.6	18.6	2.58
805	72	28.0	14.8	1.51	27.1	14.5	1.69	26.1	14.2	1.90	25.0	13.8	2.12	23.8	13.3	2.36	22.3	12.8	2.62
	67	25.9	19.1	1.52	25.0	18.8	1.70	24.1	18.4	1.90	22.9	17.9	2.12	21.7	17.5	2.36	20.3	16.9	2.61
	63††	24.2	18.6	1.53	23.4	18.2	1.71	22.4	17.8	1.90	21.4	17.4	2.12	20.3	16.9	2.35	18.9	16.3	2.60
	62	24.0	23.2	1.53	23.1	22.7	1.71	22.2	22.2	1.90	21.4	21.4	2.12	20.4	20.4	2.35	19.5	19.5	2.61
	57	23.7	23.7	1.53	23.0	23.0	1.71	22.2	22.2	1.90	21.4	21.4	2.12	20.5	20.5	2.35	19.4	19.4	2.61

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Cooling		Indoor Section	Size	Cooling	
		Capacity	Power			Capacity	Power
FK4CNF	001	0.99	1.00		—	—	—
	002	1.00	1.00				
	003	1.01	0.98				

38YSA030-31 Outdoor Section With FK4CNF003 Indoor Section																			
788	72	34.3	17.0	1.74	32.9	16.5	2.01	31.6	16.0	2.32	30.3	15.5	2.66	28.6	14.9	3.02	26.8	14.2	3.41
	67	31.4	21.1	1.77	30.3	20.6	2.04	29.1	20.1	2.35	27.6	19.5	2.68	26.1	18.9	3.04	24.6	18.3	3.43
	63††	29.3	20.6	1.79	28.2	20.1	2.06	27.0	19.6	2.37	25.8	19.0	2.70	24.4	18.4	3.06	22.8	17.7	3.44
	62	28.8	25.1	1.80	27.7	24.6	2.07	26.6	24.1	2.37	25.4	23.5	2.70	24.0	22.9	3.06	22.6	22.1	3.44
	57	27.5	27.5	1.81	26.6	26.6	2.08	25.7	25.7	2.38	24.7	24.7	2.71	23.7	23.7	3.06	22.5	22.5	3.45
875	72	34.8	17.6	1.74	33.5	17.1	2.02	32.2	16.6	2.33	30.7	16.1	2.67	29.0	15.5	3.03	27.2	14.9	3.42
	67	32.0	22.2	1.78	30.8	21.7	2.05	29.4	21.1	2.35	28.1	20.6	2.69	26.5	19.9	3.05	25.0	19.4	3.44
	63††	29.8	21.6	1.80	28.7	21.1	2.07	27.5	20.5	2.38	26.1	19.9	2.70	24.8	19.4	3.07	23.2	18.7	3.45
	62	29.4	26.6	1.81	28.3	26.1	2.08	27.1	25.5	2.38	25.8	24.8	2.71	24.6	24.2	3.07	23.1	23.1	3.45
	57	28.4	28.4	1.82	27.5	27.5	2.09	26.5	26.5	2.38	25.4	25.4	2.71	24.3	24.3	3.07	23.1	23.1	3.45
1006	72	35.4	18.5	1.76	34.2	18.0	2.03	32.8	17.5	2.34	31.1	17.0	2.67	29.5	16.4	3.05	27.7	15.8	3.44
	67	32.7	23.7	1.79	31.3	23.1	2.06	29.9	22.6	2.37	28.6	22.1	2.70	27.0	21.4	3.07	25.5	20.8	3.46
	63††	30.5	23.0	1.81	29.3	22.5	2.09	27.9	21.9	2.39	26.5	21.3	2.72	25.3	20.8	3.09	23.7	20.1	3.47
	62	30.1	28.6	1.82	29.0	28.0	2.09	27.7	27.3	2.39	26.5	26.5	2.72	25.4	25.4	3.08	24.1	24.1	3.47
	57	29.6	29.6	1.82	28.7	28.7	2.10	27.6	27.6	2.39	26.5	26.5	2.72	25.3	25.3	3.08	24.0	24.0	3.47

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Cooling		Indoor Section	Size	Cooling	
		Capacity	Power			Capacity	Power
FK4CNF	002	0.99	1.03		—	—	—
	003	1.00	1.00				
	005	1.02	0.99				

See notes on pg. 11.

Detailed cooling capacities* continued

EVAP AIR		CONDENSER ENTERING AIR TEMPERATURES °F																	
		75			85			95			105			115			125		
		Capacity MBtuh†		Total Sys	Capacity MBtuh†		Total Sys	Capacity MBtuh†		Total Sys	Capacity MBtuh†		Total Sys	Capacity MBtuh†		Total Sys	Capacity MBtuh†		Total Sys
CFM	EWB	Total	Sens‡	Kw**	Total	Sens‡	Kw**	Total	Sens‡	Kw**	Total	Sens‡	Kw**	Total	Sens‡	Kw**	Total	Sens‡	Kw**
38YSA036-31 Outdoor Section With FK4CNF005 Indoor Section																			
945	72	41.3	20.5	2.33	39.8	20.0	2.60	38.1	19.3	2.90	36.2	18.7	3.23	34.3	18.0	3.59	32.3	17.2	3.98
	67	37.9	25.6	2.31	36.6	25.1	2.59	34.9	24.4	2.88	33.2	23.7	3.21	31.4	23.0	3.56	29.5	22.3	3.95
	63††	35.4	25.0	2.30	34.1	24.5	2.57	32.6	23.8	2.87	31.0	23.1	3.19	29.5	22.4	3.55	27.8	21.7	3.93
	62	34.8	30.7	2.30	33.5	30.1	2.57	32.1	29.4	2.87	30.5	28.7	3.19	28.9	27.9	3.54	27.4	27.1	3.93
	57	33.4	33.4	2.29	32.4	32.4	2.56	31.2	31.2	2.86	30.0	30.0	3.18	28.6	28.6	3.54	27.2	27.2	3.92
1050	72	42.1	21.4	2.35	40.4	20.8	2.62	38.6	20.1	2.92	36.6	19.4	3.25	34.6	18.7	3.61	32.5	18.0	4.00
	67	38.7	27.0	2.34	37.1	26.4	2.60	35.4	25.7	2.90	33.6	25.0	3.23	32.0	24.4	3.59	30.1	23.6	3.98
	63††	36.2	26.4	2.32	34.7	25.7	2.59	33.1	25.0	2.89	31.6	24.4	3.22	29.9	23.6	3.57	28.1	22.9	3.95
	62	35.6	32.6	2.32	34.2	31.9	2.59	32.7	31.2	2.89	31.3	30.5	3.21	29.7	29.6	3.57	28.2	28.2	3.95
	57	34.5	34.5	2.31	33.5	33.5	2.59	32.2	32.2	2.88	30.9	30.9	3.21	29.5	29.5	3.56	28.0	28.0	3.95
1208	72	43.0	22.6	2.38	41.0	21.9	2.65	39.1	21.2	2.95	37.2	20.5	3.28	35.1	19.8	3.64	32.9	19.1	4.03
	67	39.6	29.0	2.37	37.8	28.3	2.63	36.0	27.6	2.93	34.4	27.0	3.26	32.7	26.3	3.62	30.7	25.5	4.01
	63††	37.0	28.2	2.35	35.3	27.5	2.62	33.9	26.9	2.92	32.3	26.2	3.25	30.3	25.4	3.60	28.5	24.6	3.98
	62	36.6	35.2	2.35	35.0	34.4	2.62	33.5	33.4	2.92	32.3	32.3	3.25	30.8	30.8	3.61	29.2	29.2	3.99
	57	36.1	36.1	2.35	34.8	34.8	2.62	33.5	33.5	2.92	32.1	32.1	3.24	30.8	30.8	3.61	29.2	29.2	3.99

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Cooling		Indoor Section	Size	Cooling	
		Capacity	Power			Capacity	Power
FK4CNB	006	1.00	0.99	**FK4CNF**	005	1.00	1.00

38YSA042-31 Outdoor Section With FK4CNB006 Indoor Section																			
1102	72	48.0	23.8	2.77	46.0	23.1	3.07	44.0	22.3	3.41	41.8	21.6	3.78	39.9	20.9	4.20	38.0	20.2	4.67
	67	44.1	29.8	2.74	42.3	29.0	3.04	40.4	28.3	3.38	38.5	27.5	3.75	36.7	26.7	4.16	34.9	26.0	4.63
	63††	41.3	29.1	2.72	39.5	28.3	3.02	37.8	27.5	3.35	36.1	26.8	3.73	34.3	26.0	4.13	32.4	25.2	4.58
	62	40.5	35.6	2.71	38.8	34.8	3.01	37.1	34.0	3.34	35.5	33.3	3.72	34.0	32.6	4.13	32.1	31.7	4.59
	57	38.6	38.6	2.70	37.5	37.5	3.00	36.3	36.3	3.34	34.8	34.8	3.71	33.3	33.3	4.12	31.8	31.8	4.58
1225	72	48.7	24.8	2.79	46.7	24.0	3.10	44.5	23.2	3.44	42.3	22.4	3.81	40.4	21.8	4.23	38.4	21.1	4.69
	67	44.9	31.3	2.76	43.0	30.6	3.07	41.0	29.8	3.40	39.3	29.1	3.78	37.4	28.4	4.20	35.3	27.5	4.65
	63††	42.0	30.6	2.74	40.2	29.8	3.04	38.3	29.0	3.38	36.7	28.3	3.75	34.8	27.4	4.16	32.7	26.6	4.61
	62	41.3	37.8	2.74	39.6	36.9	3.04	38.0	36.2	3.38	36.2	35.3	3.75	34.6	34.5	4.16	32.9	32.9	4.62
	57	40.1	40.1	2.73	38.7	38.7	3.03	37.5	37.5	3.37	36.0	36.0	3.74	34.4	34.4	4.15	32.7	32.7	4.61
1409	72	49.6	26.1	2.83	47.5	25.4	3.13	45.3	24.6	3.47	43.3	23.9	3.85	40.9	23.1	4.26	38.8	22.4	4.73
	67	45.7	33.6	2.80	43.8	32.8	3.10	42.0	32.1	3.44	40.0	31.3	3.82	38.1	30.6	4.24	35.8	29.7	4.69
	63††	42.8	32.7	2.78	41.0	31.9	3.08	39.3	31.2	3.42	37.3	30.3	3.79	35.3	29.5	4.19	33.2	28.6	4.64
	62	42.2	40.8	2.77	40.5	39.8	3.07	39.0	39.0	3.42	37.3	37.3	3.79	35.8	35.8	4.21	34.2	34.2	4.66
	57	41.9	41.9	2.77	40.3	40.3	3.07	39.0	39.0	3.42	37.4	37.4	3.79	35.7	35.7	4.20	33.9	33.9	4.66

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Cooling		Indoor Section	Size	Cooling	
		Capacity	Power			Capacity	Power
FC4BNB	054	0.98	1.07	**FK4CNF**	005	1.00	1.02
FK4CNB	006	1.00	1.00		—	—	—

38YSA048-31 Outdoor Section With FK4CNB006 Indoor Section																			
1260	72	55.7	27.3	3.10	53.4	26.4	3.51	51.0	25.5	3.96	48.4	24.6	4.44	45.7	23.6	4.97	42.9	22.6	5.54
	67	51.2	34.0	3.08	49.1	33.1	3.49	46.9	32.2	3.93	44.7	31.3	4.42	42.3	30.3	4.94	39.7	29.3	5.50
	63††	48.0	33.3	3.07	45.9	32.4	3.47	44.0	31.5	3.92	41.9	30.5	4.39	39.5	29.5	4.91	37.1	28.4	5.46
	62	47.1	40.6	3.07	45.1	39.7	3.46	43.3	38.8	3.91	41.1	37.8	4.39	38.9	36.7	4.90	36.6	35.6	5.45
	57	44.7	44.7	3.06	43.2	43.2	3.46	41.6	41.6	3.89	40.0	40.0	4.38	38.2	38.2	4.89	36.3	36.3	5.45
1400	72	56.6	28.3	3.13	54.1	27.4	3.54	51.6	26.5	3.99	49.0	25.5	4.47	46.6	24.7	5.01	43.6	23.7	5.58
	67	52.1	35.7	3.11	49.9	34.8	3.52	47.5	33.8	3.96	45.4	33.0	4.45	42.9	32.0	4.97	40.1	30.9	5.53
	63††	48.8	34.9	3.10	46.7	33.9	3.50	44.7	33.1	3.95	42.4	32.1	4.42	40.0	31.0	4.94	37.5	29.9	5.49
	62	48.0	42.9	3.10	46.2	42.1	3.50	44.1	41.1	3.94	41.9	40.0	4.42	39.6	38.9	4.93	37.3	37.3	5.49
	57	46.3	46.3	3.09	44.6	44.6	3.49	43.1	43.1	3.94	41.3	41.3	4.42	39.4	39.4	4.93	37.3	37.3	5.49
1610	72	57.6	29.8	3.18	55.0	28.9	3.58	52.4	27.9	4.03	49.7	27.0	4.52	47.3	26.2	5.06	44.4	25.2	5.63
	67	53.1	38.2	3.16	50.7	37.2	3.56	48.6	36.4	4.01	46.1	35.4	4.50	43.4	34.3	5.02	40.7	33.3	5.58
	63††	49.8	37.2	3.14	47.8	36.3	3.55	45.5	35.3	3.99	43.1	34.3	4.47	40.6	33.3	4.99	38.0	32.2	5.54
	62	49.0	46.3	3.14	47.3	45.4	3.55	45.0	44.3	3.99	42.8	42.8	4.47	40.8	40.8	4.99	38.6	38.6	5.55
	57	48.2	48.2	3.14	46.4	46.4	3.54	44.9	44.9	3.99	42.9	42.9	4.47	40.9	40.9	4.99	38.7	38.7	5.55

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Cooling		Indoor Section	Size	Cooling	
		Capacity	Power			Capacity	Power
FC4BNB	054	0.99	1.05	**FK4CNF**	005	1.00	1.02
FK4CNB	006	1.00	1.00		—	—	—

* Detailed cooling capacities are based on indoor and outdoor unit at the same elevation per ARI standard 210/240-94. If additional tubing length and/or indoor unit is located above outdoor unit, a slight variation in capacity may occur.

† Total and sensible capacities are net capacities. Blower motor heat has been subtracted.

‡ Sensible capacities shown are based on 80°F (27°C) entering air at the indoor coil. For sensible capacities at other than 80°F (27°C), deduct 835 Btuh (245 kw) per 1000 CFM (480 L/S) of indoor coil air for each degree below 80°F (27°C), or add 835 Btuh (245 kw) per 1000 CFM (480 L/S) of indoor coil air per degree above 80°F (27°C).

** System kw is total of indoor and outdoor unit kilowatts.

†† At TVA rating indoor condition (75°F edb/63°F ewb). All other indoor air temperatures are at 80°F edb.

EWB — Entering Wet Bulb.

Heat pump heating performance

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURES °F																							
		–3			7			17			27			37			47			57			67		
		Capacity (MBtuh)		Total Pwr	Capacity (MBtuh)		Total Pwr	Capacity (MBtuh)		Total Pwr	Capacity (MBtuh)		Total Pwr	Capacity (MBtuh)		Total Pwr	Capacity (MBtuh)		Total Pwr	Capacity (MBtuh)		Total Pwr	Capacity (MBtuh)		Total Pwr
EDB	CFM	Total	Integ*	Kw†	Total	Integ*	Kw†	Total	Integ*	Kw†	Total	Integ*	Kw†	Total	Integ*	Kw†	Total	Integ*	Kw†	Total	Integ*	Kw†	Total	Integ*	Kw†
38YSA024-31 Outdoor Section With FK4CNF002 Indoor Section																									
65	630	9.00	8.28	1.62	11.4	10.4	1.65	14.0	12.8	1.70	17.0	15.1	1.77	20.3	18.5	1.84	24.1	24.1	1.92	28.2	28.2	2.00	32.6	32.6	2.09
	700	9.04	8.32	1.65	11.4	10.5	1.66	14.1	12.9	1.70	17.1	15.2	1.75	20.5	18.7	1.81	24.3	24.3	1.88	28.5	28.5	1.95	33.0	33.0	2.02
	805	9.09	8.37	1.68	11.5	10.6	1.68	14.3	13.0	1.70	17.3	15.4	1.74	20.8	18.9	1.79	24.6	24.6	1.84	28.8	28.8	1.89	33.4	33.4	1.95
70	630	8.89	8.18	1.69	11.2	10.3	1.72	13.8	12.6	1.78	16.7	14.9	1.85	20.0	18.2	1.93	23.7	23.7	2.02	27.8	27.8	2.11	32.2	32.2	2.20
	700	8.94	8.22	1.71	11.3	10.4	1.73	13.9	12.7	1.77	16.9	15.0	1.83	20.9	19.0	1.91	24.0	24.0	1.98	28.1	28.1	2.05	32.5	32.5	2.13
	805	8.99	8.27	1.74	11.3	10.4	1.75	14.0	12.8	1.77	17.1	15.2	1.82	20.5	18.7	1.87	24.3	24.3	1.93	28.5	28.5	1.99	33.0	33.0	2.05
75	630	8.78	8.08	1.76	11.1	10.2	1.80	13.6	12.4	1.86	16.5	14.6	1.94	19.8	18.0	2.03	23.4	23.4	2.12	27.4	27.4	2.22	31.7	31.7	2.32
	700	8.82	8.11	1.78	11.1	10.2	1.80	13.7	12.5	1.85	16.6	14.8	1.92	20.0	18.2	1.99	23.7	23.7	2.07	27.7	27.7	2.16	32.1	32.1	2.25
	805	8.87	8.16	1.81	11.2	10.3	1.82	13.8	12.6	1.85	16.8	14.9	1.90	20.2	18.4	1.96	24.0	24.0	2.03	28.1	28.1	2.10	32.6	32.6	2.17

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Heating		Indoor Section	Size	Heating	
		Capacity	Power			Capacity	Power
FK4CNF	001	1.00	1.01		—	—	—
	002	1.00	1.00				
	003	1.00	0.99				

38YSA030-31 Outdoor Section With FK4CNF003 Indoor Section																									
65	788	12.8	11.8	2.09	15.9	14.6	2.18	19.3	17.6	2.28	23.1	20.5	2.39	27.3	24.9	2.50	32.1	32.1	2.63	37.2	37.2	2.78	42.9	42.9	2.93
	875	12.9	11.8	2.10	16.0	14.7	2.17	19.4	17.7	2.26	23.3	20.7	2.35	27.6	25.1	2.45	32.3	32.3	2.56	37.6	37.6	2.68	43.4	43.4	2.81
	1006	12.9	11.9	2.13	16.1	14.8	2.18	19.6	17.9	2.24	23.5	20.8	2.31	27.8	25.3	2.39	32.7	32.7	2.48	38.0	38.0	2.57	44.0	44.0	2.68
70	788	12.6	11.6	2.18	15.7	14.4	2.29	19.1	17.4	2.41	22.8	20.3	2.53	27.0	24.6	2.66	31.7	31.7	2.80	36.8	36.8	2.96	42.4	42.4	3.13
	875	12.7	11.7	2.20	15.8	14.5	2.29	19.2	17.5	2.38	23.0	20.4	2.49	27.3	24.8	2.60	32.0	32.0	2.73	37.2	37.2	2.86	42.8	42.8	3.00
	1006	12.8	11.7	2.23	15.9	14.6	2.30	19.4	17.7	2.37	23.2	20.6	2.45	27.5	25.1	2.54	32.4	32.4	2.64	37.6	37.6	2.75	43.5	43.5	2.86
75	788	12.4	11.4	2.28	15.5	14.2	2.41	18.8	17.2	2.54	22.6	20.1	2.68	26.8	24.4	2.83	31.4	31.4	2.98	36.4	36.4	3.15	41.8	41.8	3.33
	875	12.7	11.7	2.30	15.6	14.3	2.40	19.0	17.3	2.52	22.8	20.2	2.64	27.0	24.6	2.76	31.7	31.7	2.90	36.7	36.7	3.04	42.3	42.3	3.20
	1006	12.6	11.6	2.32	15.7	14.4	2.41	19.2	17.5	2.50	23.0	20.4	2.60	27.3	24.8	2.70	32.0	32.0	2.81	37.2	37.2	2.93	42.9	42.9	3.06

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Heating		Indoor Section	Size	Heating	
		Capacity	Power			Capacity	Power
FK4CNF	002	1.00	1.01		—	—	—
	003	1.00	1.00				
	005	1.00	0.94				

See notes on pg. 13.

Heat pump heating performance continued

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURES °F																							
		–3			7			17			27			37			47			57			67		
		Capacity (MBtuh)		Total Pwr	Capacity (MBtuh)		Total Pwr	Capacity (MBtuh)		Total Pwr	Capacity (MBtuh)		Total Pwr	Capacity (MBtuh)		Total Pwr	Capacity (MBtuh)		Total Pwr	Capacity (MBtuh)		Total Pwr	Capacity (MBtuh)		Total Pwr
EDB	CFM	Total	Integ*	Kw†	Total	Integ*	Kw†	Total	Integ*	Kw†	Total	Integ*	Kw†	Total	Integ*	Kw†	Total	Integ*	Kw†	Total	Integ*	Kw†	Total	Integ*	Kw†
38YSA036-31 Outdoor Section With FK4CNF005 Indoor Section																									
65	945	14.9	13.7	2.20	18.2	16.7	2.31	22.0	20.0	2.42	26.0	23.1	2.51	30.7	27.9	2.64	35.8	35.8	2.77	41.4	41.4	2.90	47.5	47.5	3.06
	1050	14.9	13.7	2.19	18.3	16.8	2.30	22.0	20.0	2.38	26.0	23.1	2.46	30.7	28.0	2.58	35.7	35.7	2.66	41.4	41.4	2.80	47.6	47.6	2.94
	1208	15.0	13.8	2.18	18.3	16.8	2.26	22.0	20.1	2.33	26.1	23.2	2.43	30.7	28.0	2.51	35.8	35.8	2.58	41.5	41.5	2.69	47.6	47.6	2.79
70	945	14.7	13.5	2.33	18.2	16.7	2.46	21.8	19.9	2.58	25.8	23.0	2.67	30.5	27.7	2.82	35.5	35.5	2.94	41.1	41.1	3.08	47.1	47.1	3.24
	1050	14.7	13.6	2.32	18.1	16.6	2.42	21.8	19.9	2.54	26.1	23.1	2.62	30.4	27.7	2.71	36.0	36.0	2.84	41.1	41.1	2.98	47.3	47.3	3.12
	1208	14.8	13.6	2.29	18.1	16.7	2.39	21.8	19.9	2.48	25.9	23.0	2.55	30.5	27.7	2.65	35.4	35.4	2.73	41.2	41.2	2.86	47.2	47.2	2.96
75	945	14.5	13.3	2.44	18.1	16.6	2.59	21.6	19.7	2.72	25.6	22.7	2.82	30.2	27.5	2.98	35.2	35.2	3.11	40.9	40.9	3.28	46.9	46.9	3.46
	1050	14.6	13.4	2.43	17.9	16.4	2.55	21.6	19.7	2.68	25.9	23.0	2.78	30.3	27.5	2.92	35.3	35.3	3.04	40.8	40.8	3.15	46.9	46.9	3.30
	1208	14.6	13.4	2.43	18.0	16.5	2.51	21.6	19.7	2.63	25.7	22.8	2.71	30.2	27.5	2.80	35.2	35.2	2.91	40.8	40.8	3.02	46.9	46.9	3.15

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Heating		Indoor Section	Size	Heating	
		Capacity	Power			Capacity	Power
FK4CNB	006	0.98	0.93	**FK4CNF**	005	1.00	1.00

38YSA042-31 Outdoor Section With FK4CNB006 Indoor Section																									
65	1102	18.9	17.4	2.57	22.7	20.9	2.67	26.9	24.6	2.77	31.4	27.9	2.88	36.4	33.1	2.98	42.0	42.0	3.13	47.9	47.9	3.28	54.3	54.3	3.44
	1225	19.0	17.5	2.56	22.8	20.9	2.64	27.0	24.6	2.73	31.4	27.9	2.82	36.5	33.2	2.93	41.9	41.9	3.04	47.9	47.9	3.16	54.4	54.4	3.31
	1409	19.0	17.5	2.54	22.8	21.0	2.62	27.0	24.6	2.70	31.4	27.9	2.77	36.5	33.2	2.86	42.0	42.0	2.95	48.0	48.0	3.06	54.3	54.3	3.16
70	1102	18.8	17.3	2.69	22.6	20.8	2.80	26.8	24.4	2.92	31.1	27.7	3.03	36.2	32.9	3.16	41.5	41.5	3.29	47.5	47.5	3.45	54.0	54.0	3.64
	1225	18.8	17.3	2.68	24.2	22.2	2.79	26.8	24.4	2.88	31.2	27.7	2.98	36.1	32.9	3.09	41.5	41.5	3.20	47.5	47.5	3.34	54.1	54.1	3.50
	1409	18.9	17.4	2.67	22.6	20.8	2.75	26.8	24.4	2.83	31.2	27.7	2.92	36.2	32.9	3.01	41.6	41.6	3.12	47.7	47.7	3.23	54.1	54.1	3.35
75	1102	18.6	17.1	2.81	22.4	20.6	2.95	26.6	24.3	3.08	30.9	27.5	3.20	35.9	32.7	3.34	41.4	41.4	3.50	47.3	47.3	3.67	53.5	53.5	3.84
	1225	18.6	17.1	2.80	22.4	20.6	2.92	26.6	24.3	3.05	31.0	27.5	3.15	35.9	32.6	3.26	41.3	41.3	3.39	47.2	47.2	3.54	53.5	53.5	3.69
	1409	18.7	17.2	2.79	22.5	20.7	2.90	26.6	24.3	2.99	30.9	27.5	3.08	35.8	32.6	3.17	41.3	41.3	3.29	47.3	47.3	3.41	53.6	53.6	3.54

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Heating		Indoor Section	Size	Heating	
		Capacity	Power			Capacity	Power
FC4BNB	054	1.01	1.07	**FK4CNF**	005	1.01	1.08
FK4CNB	006	1.00	1.00		—	—	—

38YSA048-31 Outdoor Section With FK4CNB006 Indoor Section																									
65	1260	19.5	18.0	2.91	24.2	22.2	3.07	29.6	27.0	3.25	35.6	31.6	3.45	42.5	38.6	3.61	50.3	50.3	3.83	59.3	59.3	4.09	69.0	69.0	4.36
	1400	19.6	18.0	2.89	24.3	22.3	3.04	29.6	27.0	3.21	35.5	31.5	3.33	42.5	38.7	3.53	50.4	50.4	3.72	59.2	59.2	3.91	69.0	69.0	4.14
	1610	19.7	18.1	2.87	25.2	23.1	3.00	29.7	27.0	3.13	35.5	31.6	3.27	42.4	38.6	3.39	50.3	50.3	3.55	59.3	59.3	3.73	68.9	68.9	3.90
70	1260	19.3	17.8	3.06	24.0	22.1	3.25	29.4	26.8	3.45	35.3	31.3	3.65	42.1	38.3	3.83	50.0	50.0	4.10	58.8	58.8	4.35	68.5	68.5	4.64
	1400	19.4	17.8	3.05	25.2	23.2	3.24	29.4	26.8	3.39	35.2	31.3	3.55	42.2	38.4	3.77	50.0	50.0	3.96	58.8	58.8	4.17	68.6	68.6	4.43
	1610	19.5	17.9	3.02	24.1	22.2	3.18	29.4	26.8	3.33	35.3	31.4	3.49	42.2	38.4	3.64	50.0	50.0	3.80	58.8	58.8	3.97	68.7	68.7	4.18
75	1260	19.1	17.6	3.22	23.8	21.9	3.43	29.1	26.6	3.64	35.0	31.1	3.87	42.0	38.2	4.12	49.6	49.6	4.35	58.5	58.5	4.64	68.1	68.1	4.94
	1400	19.2	17.7	3.21	25.2	23.2	3.42	29.2	26.6	3.59	35.1	31.1	3.81	41.8	38.1	3.97	49.5	49.5	4.19	58.4	58.4	4.44	68.0	68.0	4.70
	1610	19.3	17.7	3.19	23.9	22.0	3.36	29.2	26.7	3.54	35.0	31.1	3.69	41.8	38.1	3.85	49.5	49.5	4.03	58.5	58.5	4.25	67.9	67.9	4.42

Multipliers for Determining the Performance With Other Indoor Sections

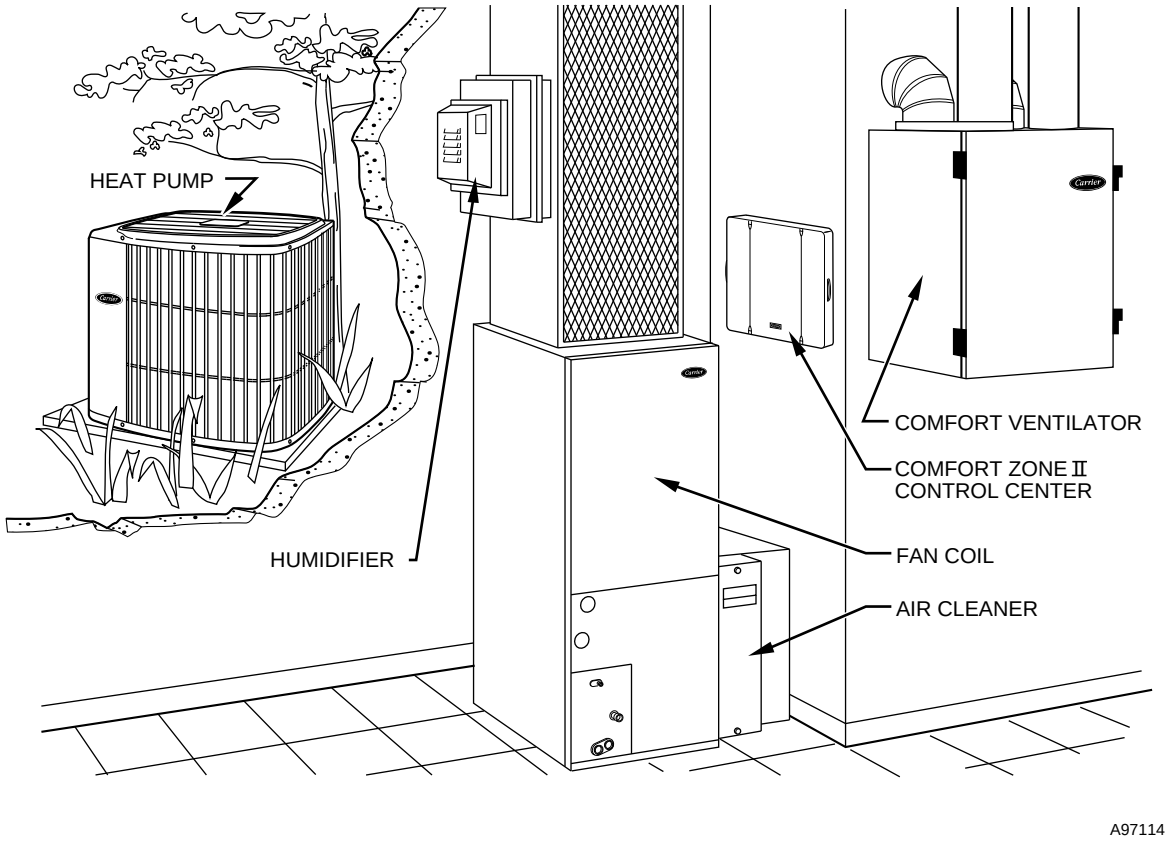
Indoor Section	Size	Heating		Indoor Section	Size	Heating	
		Capacity	Power			Capacity	Power
FK4BNB	054	1.00	1.04	**FK4CNF**	005	1.00	1.13
FK4CNB	006	1.00	1.00		—	—	—

* The Btuh heating capacity values shown are net “integrated” values from which the defrost effect has been subtracted. The Btuh heating from supplement heaters should be added to those values to obtain total system capacity.

† The kw values include the compressor, outdoor fan motor, and indoor blower motor. The kw from supplement heaters should be added to these values to obtain total system kilowatts.

EDB — Entering Dry Bulb.

Matched system



System Design

1. Intended for outdoor installation with free air inlet and outlet. Outdoor fan external static pressure available is less than 0.01-in. wc.
2. Minimum outdoor operating air temperature for cooling mode without low-ambient operation accessory is 55°F (12.8°C).
3. Maximum outdoor operating air temperature for cooling mode is 125°F (51.7°C).
4. Minimum outdoor operating air temperature for heating mode is –30°F (–34.4°C).
5. Maximum outdoor operating air temperature for heating mode is 66°F (18.9°C).
6. For reliable operation, unit should be level in all horizontal planes.
7. Maximum elevation of indoor coil above or below base of outdoor unit is: indoor coil above = 50 ft, indoor coil below = 150 ft. (See items 8 and 9 following.)
8. For interconnecting refrigerant tube lengths greater than 50 ft, consult Residential Split System Long-Line Application Guideline available from equipment distributor.
9. Not more than 36 in. of refrigerant tube should be buried in the ground. If necessary to bury tubes under a sidewalk, provide a minimum 6-in. vertical rise to the valve connections at the unit. For buried refrigerant tube lengths from 3 to 100 ft, consult Residential Split System Buried Line Application Guideline.
10. Use only copper wire for electric connection at unit. Aluminum and clad aluminum are not acceptable for the type of connector provided.

SERVICE TRAINING

Packaged Service Training programs are an excellent way to increase your knowledge of the equipment discussed in this manual, including:

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- Installation Overview
- Operating Sequence

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